

Progress Report

A. Project Identifiers:

- 1) Award Number: NA16FX1409
- 2) Grant Program: SSLRI Program
- 3) Name of Recipient Organization: University of Alaska Fairbanks
- 4) Principal Investigator: Brenda Konar, Kate Wynne, Sue Hills
- 5) Project Title: Fish assemblages associated with sea lion haul-outs
- 6) Funding: federal \$175,559 match: approx. \$5,000 (GAP project)
- 7) Award Period: 1 June 2001 to 31 May 2003
- 8) Period covered by this report: June 1 2001 to November 30 2001

B. Project Summary

Steller sea lions (SSL) from the endangered western Alaska stock eat a variety of prey - some of commercial value others not. A common link among them is that these known prey species spawn, grow, or spend their entire lives in shallow and subtidal waters, including species whose commercial harvest is being restricted to reduce potential competition with SSL. These shallow nearshore waters, their algal cover, and fish/prey inhabitants may be of particular importance to SSL pups that use the area immediately adjacent to haulouts extensively in their first year while developing their diving and foraging abilities. Despite their potential importance to young sea lions, prey availability and other ecological attributes of nearshore SSL habitat have not been well described. One reason is that these areas are generally too shallow and rocky for standard large-vessel acoustic and trawl prey surveys.

In this study we are using SCUBA-based surveys to quantify juvenile and adult fish species present in nearshore waters adjacent to two sea lion haul-outs. Seasonal prey availability and biological and physical parameters at these sites will be used to describe nearshore habitat used by young sea lions for shelter, prey, and training. These will be compared to results of similar surveys we are conducting at two nearby sites not used by Steller sea lions as haulouts as a means of assessing key components of traditionally used haulout habitat. Our SCUBA surveys have been coordinated to coincide with and augment ongoing research on Steller sea lion diets, foraging patterns, and offshore prey availability.

C. Summary of Progress and Results

Our objectives are as follows:

- 1) document species composition, relative abundance, and distribution of subtidal fish species within 100m of Long Is and Cape Chiniak SSL haulouts
 - a. determine seasonal variability
 - b. compare to seasonal SSL diet data available from same sites
 - c. determine covariates : water temperature, algal cover, slope, bathymetry, substrate
- 2) document species composition, relative abundance, and distribution of subtidal fish species within 100m of Miller Point and Queer Island, nearby sites not used as SSL haulouts
 - a. determine seasonal variability

- b. determine covariates : water temperature, algal cover, slope, bathymetry, substrate
- 3) compare results at these four sites.

Unique features may comprise significant components of critical habitat for young SSL, e.g., why sites have been used traditionally by SSLs.

To begin to accomplish these objectives, we have had two successful field efforts. In July 2001, we sampled both SSL and controls sites. We were able to complete three transects at 5 different depths (9, 15, 21, 27, 33 m) at each site. We were unable to sample the 3 m depth contour as proposed, as this depth was not found adjacent to the haul-outs. Rocks that sea lions haul out on appear to descend straight down to approximately 9 m. In November 2001, we attempted to re-sample all of our sites. Because of poor weather conditions, we were only able to sample our two Sea Lion sites and one of our controls. We were unable to get close enough to sample one of our control sites. We are currently preparing for our March sampling.

One change that has occurred in our study plan is that the trapping portion has been dropped. During our first sampling period, we discovered that the traps do not work in the typical currents that Kodiak experiences. Since the traps did not work, we disassembled them and made a diver-assisted trawl to use in the kelp beds. One of the problems with sampling small schooling fish (such as sand lance) is being able to quantify them. Normal trawls cannot be used in these shallow waters, but we believe that our new trawl will allow us to quantify these seasonal schools. If this method is successful, this will be an important unexpected benefit of this project.

Data collected thus far have been put into a database and are currently being analyzed. We have acquired much fish and benthic community data and look forward to publishing in the near future.

D. Problems

The largest problem we have had so far is the weather in Kodiak. Winter storms in November prevented us from sampling all of our stations, although we are happy with the number we were able to visit. Because of weather, we had to charter a vessel in November (see match fund). We are planning to charter another vessel in March. We have two proposals in for this additional funding but have not heard anything yet.

Prepared by:

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